

## WHAT IS CLAIMED IS:

1. A die holding tray, comprising:
  - a rigid base support member;
  - a generally top planar surface supported by the base support member, said top surface having a set of machined lateral grooves and a set of machined longitudinal grooves, said grooves being spaced apart by an amount approximately corresponding to the dimensions of the dies to be held in the tray;
  - a plurality of strips sized to fill one set of the grooves and placed in the one set of grooves, thereby forming pockets for receiving dies, said pockets having a bottom and side walls comprising a segment of an unfilled machined groove and end walls comprising segments of the sides of strips; and
  - vacuum channels communicating into the bottom of the pockets for enabling a vacuum to be drawn upon dies in the pockets in order to enhance the tray holding capability.
2. The die holding tray of **Claim 1**, wherein the base support member and the top surface comprise the same material.
3. The die holding tray of **Claim 1**, wherein the base support member is comprised of a metal.
4. The die holding tray of **Claim 1**, wherein the base support member has a bottom and wherein the vacuum channels are wider near the bottom than near the top surface.

5. The die holding tray of **Claim 1**, wherein the strips are made of a compliant material.

6. The die holding tray of **Claim 5**, wherein the strips are made of metal.

7. The die holding tray of **Claim 1**, wherein the tray comprises anti-static material arranged to transport charges from the pockets to the base support member.

8. The die holding tray of **Claim 1**, wherein the interface between the walls of the pockets and the bottom is essentially orthogonal.

9. The die holding tray of **Claim 1**, wherein one set of grooves is a polished surface.

10. The die holding tray of **Claim 1**, wherein the size of the vacuum channels as they enter the bottom of the pockets is essentially the largest size such channels can be while ensuring that the dies that are intended for the pockets cover the channels when the dies are placed against either side wall of the pockets.

11. The die holding tray of **Claim 1**, further comprising a raised plate mounted to the base support member, said raised plate comprising the top surface.

12. The die holding tray of **Claim 11**, wherein the raised plate comprises a different material composition than the base support member.

13. The die holding tray of **Claim 12**, wherein the raised plate comprises a compliant material.

14. The die holding tray of **Claim 12**, wherein the raised plate comprises rubber.

15. The die holding tray of **Claim 14**, wherein the raised plate comprises neoprene rubber.

16. The die holding tray of **Claim 12**, wherein the raised support plate comprises a material having a high co-efficient of friction.

17. The die holding tray of **Claim 16**, wherein the raised support plate comprises a material having a co-efficient of friction on glass more than about 0.8.

18. The die holding tray of **claim 11**, wherein the raised plate further comprises a rigid inner stage covered with a compliant material into which the grooves are machined.

19. The die holding tray of **claim 18**, wherein the thickness of the compliant material between the bottom of the pockets and the inner stage is between about 0.10 and 0.20 millimeters.

20. A method of manufacturing a die holding tray, comprising:  
making a rigid base support member;  
forming a generally planar top surface;  
machining a set of lateral grooves and a set of longitudinal grooves spaced apart by an amount corresponding to the dimensions of the dies to be held in the tray;  
shaping a plurality of strips sized to fill one set of grooves;  
placing the strips in one set of grooves, thereby forming pockets for receiving dies, said pockets having a bottom and side walls comprising segments of an unfilled groove and end walls comprising segments of the sides of strips; and  
boring vacuum channels communicating into the bottom of the pockets for enabling a vacuum to be drawn upon dies in the pockets in order to enhance the tray holding capability.

21. The method of **claim 20**, wherein the base support member and the top surface are comprised of the same material.

22. The method of **claim 20**, wherein boring further comprises counterboring larger channels from the base support member than through holes bored from the top surface.

23. The method of **claim 20**, wherein the side walls of the pockets are orthogonal to the bottom of the pockets.

24. The method of **claim 20**, wherein forming further comprises affixing a raised plate to the base support member, said raised plate comprising the top surface.

25. The method of **claim 24**, wherein the raised plate comprises a compliant material.

26. The method of **claim 24**, wherein the raised plate comprises a material having a high co-efficient of friction.

27. The method of **claim 24**, wherein the raised plate comprises a rigid inner stage that is covered with a compliant material.

28. The method of **claim 20**, further comprising deburring the top surface.

29. The method of **claim 20**, wherein the set of grooves into which strips are to be placed are machined prior to the other set of grooves.